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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/834,919	04/16/2001	Hajime Akimoto	503.40029X00	5427

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EXAMINER	
KUMAR, SRILAKSHMI K	
ART UNIT	PAPER NUMBER
2629	

MAIL DATE	DELIVERY MODE
07/25/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	09/834,919	AKIMOTO ET AL.	
	Examiner	Art Unit	
	SRILAKSHMI K. KUMAR	2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *17 March 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-4,9,10,17,19,20,23,24 and 26-28* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *1-4,9,10,17,19,20,23,24,26 and 27* is/are allowed.

6)☒ Claim(s) *28* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

The following office action is in response to the amendment filed March 17, 2008. Claims 1-4, 9, 10, 17, 19, 20, 23, 24 and 26-28 are pending. Claims 1 and 24 have been amended.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. ***Claim 28*** is rejected under 35 U.S.C. 103(a) as being unpatentable over Moriyama in view of Zhang et al. (U.S. Patent No. 6,611,261) and further in view of Embree (US 5,838,187)..

With reference to **claim 28**, Moriyama teaches an image display apparatus comprising; a plurality of display pixels arranged in a matrix in order to provide image display (col. 6, lines 16-19), each display pixel comprising a pixel electrode (Fig. 8, item 13) and a pixels switch

connected to said pixel electrode in series (Fig. 8, item 14), a group of signal lines (Fig. 8, item 11) and display image selection means for writing said image signal in a given display pixel through said group of signal lines and said group of pixel switches (col. 15, lines 67-col. 16, lines 30)

Moriyama doesn't teach a digital to analog converter and where the D-to-A converter contains a reference voltage generating circuit using a boron doped poly-Si thin film resistor as a gray scale voltage generating resistor.

Zhang et al. teaches a LCD device wherein it is disclosed the conventionality of using poly-silicon thin film transistors in LCD units and the peripheral circuits as well (see column 1, lines 15-20). It is further taught the usage of a D/A converter (350), which is comprised in the poly-Si digital driver, for generating gray scale signals based on the gray-scale reference voltage (see column 15, lines 42-57).

Therefore it would have been obvious to one having ordinary skill in the art at the time of the invention to allow the combination of the poly-Si type image signal generating means as taught by Zhang et al. to be used in a device similar to that which is taught by Moriyama in order to provide an improved arrangement for peripheral circuits of the display unit thereby allowing them to be formed as an integrated device.

Moriyama as modified by Zhang et al teach an image display apparatus comprising a digital to analog converter comprising a reference voltage generating circuit with a poly-SI thin film resistor, however, there is no teaching of where the poly-SI thin film resistor is a boron doped thin film resistor. Embree teaches doesn't teach using a boron-doped poly crystalline SI thin film resistor in col. 9, lines 51-53 and col. 10, lines 49-51. It would have been obvious to one of

ordinary skill in the art at the time the invention was made to include a boron doped poly-SI thin film resistor as taught by Embree into Moriyama as modified by Zhang et al in order to prevent undesirable voltage swings (Embree, col. 3, lines 10-20).

Allowable Subject Matter

4. Claims 1-4, 9, 10, 17, 19, 20, 23, 24, 26 and 27 are allowed.

Response to Arguments

5. Applicant's arguments with respect to claim 28 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to SRILAKSHMI K. KUMAR whose telephone number is (571)272-7769. The examiner can normally be reached on 7:00 am to 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sue Lefkowitz can be reached on 571 272 3638. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Srilakshmi K Kumar/
Primary Examiner
Art Unit 2629

SKK
July 20, 2008